CONAN DOYLE AT HOME.

THE AUTHOR OF "SHERLOCK HOLMES" AND HOW HE WORKS.

Dr. Joseph Bell of Edinburgh the Original of the Great Detective—Dr. Doyle as a Student and as a Literary Critic.

Dr. A. Conan Doyle, who arrived in this country a week ago, has come ostensibly to deliver a series of lectures, but the real object of his visit is to travel through the United States. If the well-known novelist is curious to see America, he may rest assured that the public here is equally eager to make his acquaintance.

Of that brilliant group of vigorous Scotchmen who are just now delighting the literary world, no single one possesses a more interesting personality than Dr. Doyle. Although but 33 years of age, his historical romances and thrilling detective stories have earned him a phenomenal reputation. To the average reader he is best known, perhaps, through the exploits of that wizard in unravelling criminal mysteries, Sherlock Holmes. And since the author has announced that Holmes is definitely dead, never more to be revived, a vivid interest centres about the creation of the very prince of detectives.

DOYLE'S INSPIRATION.

Dr. Doyle himself frankly acknowledges that this unique character was inspired by Dr. Joseph Bell of Edinburgh, one of his professors at the Scotch University. While he could scarcely be called the original of Sherlock Holmes, yet Dr. Bell's singular genius for noting details and from them forming a chain of circumstantial evidence, certainly gave Doyle the clue to his now famous hero. A theory which Dr. Bell constantly advanced was that any really good doctor ought to be able to tell before a patient has fairly sat down just about what is the matter with him or her. With a woman especially this observant physician can often tell by noticing her exactly what part of her body she is going to talk about. He persistently impressed upon his students—Conan Doyle among them—the vast importance of little distinctions, the endless significance of trifles.

CONAN DOYLE IN HIS STUDY.

Dr. Bell says: "The great majority of people, of incidents, and of cases resemble each other in the main and larger features. For instance, most men have apiece a head, two arms, a nose, a mouth, and a certain number of teeth. It is the little differences, in themselves trifles, such as the droop of an eyelid, or what not, which differentiate men."

The Doctor illustrated his mode of procedure by giving one or two instances to prove the successful application of his theory, and both of them are strongly suggestive of Sherlock Holmes's methods. "Once," he said, "a man walked into the room where I was instructing the students, and his case seemed to be a very simple one. I was talking about what was wrong with him. 'Of course, gentlemen,' I happened to say, 'he has been a soldier in a Highland regiment and probably a bandsman.' I pointed out the swagger in his walk suggestive of the piper; while his shortness told me that if he had been a soldier, it was probably as a bandsman. In fact, he had the whole appearance of a man in one of the Highland regiments. The man turned out to be nothing but a shoemaker, and had never been in the army in his life. This was rather a floorer, but, being absolutely certain I was right, seeing something was up, I did a pretty cool thing. I told two of the strongest clerks or dressers to remove the man to a side room and detain him till I came. I next had him stripped and under the left breast I instantly detected a little blue 'D' branded on his skin. He was a deserter. That was how they used to mark them in the Crimean days, and later, although it is not permitted now. Of course, the reason of his evasion was at once clear.

THE ORIGINAL SHERLOCK HOLMES.

"Conan Doyle," the Doctor continued, "was one of the best students I ever had. He was exceedingly interested always in anything connected with diagnosis, and was never tired of trying to discover all those little details one looks for. I recollect he was much amused once when a patient walked in and sat down. 'Good morning, Pat,' I said, for it was impossible not to see that he was an Irishman. 'Good morning, your honor,' replied the patient. 'Did you like your walk over the links to-day as you came in from the south side of the town?' I asked. 'Yes,' said Pat. 'Did your honor see me?' Well, Conan Doyle could not see how I knew that, absurdly simple as it was. On a showery day, such as that had been, the reddish clay at bare parts of the links adheres to the boot, and a tiny part is bound to remain. There is no such clay anywhere else around the town for miles. That and one or two similar instances excited Doyle's keenest interest, and set him experimenting himself, with very brilliant results, as you know."

In Conan Doyle's study, which is workshop, smoking room, and snuggery all in one, there stands on the bookcase a bust of a man with a keen, shrewd face. At first glance one is apt to fancy it the portrait of some great British statesman, which is quite a mistake. It is a clever bit of imaginative work done by a young Birmingham sculptor, Wilkins by name. He cast it in plaster, and sent it to Dr. Doyle as his ideal of Sherlock Holmes. The lean, well-modelled head, close-shut lips, inscrutable eyes, and iron jaw make an admirable conception of the now famous detective.

And by the way, it would be hard to find a more workmanlike room than this cosey study, where "The Refugees," "The Slapping Sal," and many another brilliant bit of fiction was written. The work bench proper stands in the corner—one of those flat-topped desks so prevalent in England. The English author does not seem to take kindly to the haughty roller-top American desk, covered with transparent varnish and twenty-three patents.

There is a bookcase, filled with solid historical volumes for the most part. The most remarkable feature of the room is a series of water-color drawings done by Conan Doyle's father. The Doyle family has always been a family of artists, and the celebrated cover of *Punch* is, as everybody knows, the work of Richard Doyle. The drawings by Mr. Doyle's father are most weird and imaginative, being in art something like what Edgar Allan Poe's stories are in fiction.

There are harpoons on the wall, for Doyle has been a whale fisher in his time, and has the skull of a polar bear and the stuffed body of an Iceland falcon to show that his aim was accurate. There are but two other Iceland falcons in England. The novelist came nearer to the North Pole than New York is to Chicago.

HIS ARCTIC EXPERIENCES.

No part of this author's varied life was richer in experiences to him than the months he spent aboard a Peterhead whaler. He roughed it along with the sturdy Scotch crew, but his receptive artist's nature received a thousand sharp impressions of which his companions remained ignorant. No one has described the sightings and hunt of a whale so vividly as Dr. Doyle, who says:

"It is not that the present generation is less persistent and skilful than its predecessors, nor is it that the Greenland whale is in danger of becoming extinct; but the true reason appears to be that nature, while depriving this unwieldy mass of blubber of any weapons, has given it in compensation a highly intelligent brain. That the whale entirely understands the mechanism of his own capture is beyond dispute. To swim backward and forward beneath a floe, in the hope of cutting the rope against the sharp edge of the ice, is a common device of the creature after being struck. By degrees, however, it has realized the fact that there are limits to the powers of its adversaries, and that by keeping far in among the icefields it may shake off the most intrepid of pursuers. Gradually the creature has deserted the open sea and bored deeper and deeper among the ice barriers, until now, at last, it really appears to have reached inaccessible feeding grounds; and it is seldom, indeed, that the watcher in the crow's nest sees the plume of spray and the black tail in the air which set his heart a-thumping.

BUST OF [illegible]

"But if a man have the good fortune to be present at a 'fall,' and, above all, if he be, as I have been, in the harpooning and in the lancing boat, he has a taste of sport which it would be ill to match. To play a salmon is a royal game, but when your fish weighs more than a suburban villa, and is worth a clear two thousand pounds; when, too, your line is a thumb's thickness of manila rope with fifty strands, every strand tested for thirty-six pounds, it dwarfs all other experiences. And the lancing, too, when the creature is spent, and your boat pulls in to give it the coup de grace with cold steel, that is also exciting! A hundred tons of despair are churning the waters up into a red foam; two great black fins are rising and falling like the sails of a windmill, casting the boat into a shadow as they droop over it, but still the harpooner clings to the head, where no harm can come, and, with the wooden butt of the twelve-foot lance against his stomach, he presses it home until the long struggle is finished, and the black back rolls over to expose the livid, whitish surface beneath. Yet amid all the excitement—and no one who has not held an oar in such a scene can tell how exciting it is—one's sympathies lie with the poor hunted creature. The whale has a small eye, little larger than that of a bullock; but I cannot easily forget the mute expostulation which I read in one, as it dimmed over in death within hand's touch of me. What could it guess, poor creature, of laws of supply and demand; or how could it imagine that when nature placed an elastic filter inside its mouth, and when man discovered that the plates of which it was composed were the most pliable and yet durable things, its death warrant was signed?"

TO THE FAR SOUTH.

Conan Doyle is not a man who goes to extremes, but it seems that he did in the matter of his voyaging. He came home from the Arctic circle, took his degree at Edinburgh, and at once shipped for the west coast of Africa.

Here is a tragedy of the sea which occurred when Doyle was a boy. He read an account of it at the time, and it made a powerful impression on his young mind. An American ship called the Marie Celeste was found abandoned off the west coast. Nothing on her was disturbed and there were no signs of a struggle. Her cargo was untouched, and there was no evidence that she had come through a storm. On the cabin table was screwed a sewing machine, and on the arm of the sewing machine was a spool of silk thread, which would have fallen off if there had been any motion of the vessel. She was loaded with clocks, and her papers showed that she had left Baltimore for Lisbon. She was taken to Gibraltar, but to this day no one knows what became of the Captain and crew of the Marie Celeste.

This mystery of the sea set the future Sherlock Holmes at work trying to find a solution for it. There was no clew to go on, except an old Spanish sword, found in the forecastle, which showed signs of having been recently cleaned. Doyle's solution of the problem appeared in the form of a story for the *Cornhill Magazine*, entitled, "J. Habbakuk Jephson's Statement." Jephson was supposed to be an American doctor who had taken passage on the ship for his health. Shortly after the story appeared the following telegram was printed in all the London papers:

"Solly Flood, her Majesty's Advocate-General at Gibraltar, telegraphs that the statement of J. H. Jephson is nothing less than a fabrication."

So it was; but the telegram was a compliment to the realism of the story, to say the least.

HIS METHODS OF WORK.

Dr. Conan Doyle is a methodical worker, and a hard worker. He pastes up over his mantel shelf a list of the things he intends to do in the coming six months, and he sticks to his task until it is done. He must be a great disappointment to his old teacher. When he had finished school the teacher called the boy up before him and said solemnly:

"Doyle, I have known you now for seven years, and I know you thoroughly. I am going to say something that you will remember in after life. Doyle, you will never come to any good!"

The making of an historical novel involves much hard reading. The results of this hard reading Doyle sets down in a note book. Sometimes all he gets out of several volumes is represented by a couple of pages in this book. For some time past he has been greatly interested in the Napoleonic revival, and has recently written some marvellously good short stories set in the stormy period of the first empire. When asked by a friend for his opinion of the great Corsican, Dr. Doyle replied:

"He was a wonderful man—perhaps the most wonderful man who ever lived. What strikes me is the lack of finality in his character. When you make up your mind that he is a complete villain, you come on some noble trait, and then your admiration of this is lost in some act of incredible meanness. But just think of it! Here was a young fellow of 30, a man who had no social advantages and but slight educational training, a member of a poverty-stricken family, entering a room with a troop of kings at his heels, and all the rest of them jealous if he spoke a moment longer to one than to the others. Then there must have been a great personal charm about the man, for some of those intimate with him loved him."

LITERARY TASTES AND OPINIONS.

Conan Doyle takes a very optimistic view of the future of romantic literature. He says: "I think there never was a time when there was a better promise. There are at least a dozen men and women who have made a deep mark, and who are still young. No one can say how far they may go. Some of them are sure to develop, for the past shows us that fiction is an art which improves up to the age of fifty or so. With fuller knowledge of life comes greater power in describing it. For example, there are more than a dozen, Barrie, Kipling, Olive Schreiner, Sarah Grand, Miss Harraden, Gilbert Parker, Quiller-Couch, Hall Caine, Stevenson, Stanley Weyman, Anthony Hope, Crockett, Rider Haggard, Jerome, Zangwill, Clark Russell, George Moore—many of them under thirty and few of them much over it. Then if a man keeps out of grooves and refuses to do his work in a mechanical way he steadily advances. Why, many of the greatest writers in our fiction did not begin until after forty. Thackeray was about forty. Scott was past forty. Charles Reade and George Eliot were as much. Richardson was fifty. To draw life one must know it. My experience is that when a man is fifty he knows he will improve until he is sixty, and when he is sixty he feels that improvement will keep right on until he is seventy; whereas, when he is twenty he thinks that perhaps he will know more when he is thirty, but is not sure. Man is an amusing animal.

"Then, although I do not read as much American fiction as I should like, what I have read has, I hope, been fairly representative. I know Cable's work, and Eugene Field's, and Hamlin Garland's and Edgar Fawcett's, and Richard Harding Davis's. I think Harold Frederic's 'In the Valley' is one of the best of recent historical romances. The danger for American fiction is, I think, that it should run in many brooks instead of one broad stream. There is a tendency to overaccentuate local peculiarities; differences, after all, are very superficial things, and good old human nature is always there under a coat of varnish. When one hears of a literature of the West or of the South it sounds aggressively sectional. Barrie and Hardy might, I know, have the same charge brought against them, unless one reads closely enough to appreciate that they have gained success by showing how the Scotch or Wessex peasant shares our common human nature, not by accentuating the points in which they differ from us."

THE OBJECT OF FICTION.

The author of Sherlock Holmes expressed himself strongly concerning William Dean Howells's strictures upon art in romance writing. He said: "We talk so much about art that we tend to forget what this art was ever invented for. It was to amuse mankind—to help the sick and the dull and the weary. If Scott and Dickens have done this for millions, they have done well by their art. Where would Gulliver and Don Quixote and Dante and Goethe be if our sole object was to draw life exactly as it exists. No; the object of fiction is to interest, and the best fiction is that which interests most. If you can interest by drawing life as it is, do so. But there is no reason why you should object to your neighbor using other means.

"I think the age of fiction is coming—the age when religious and social and political changes will all be affected by means of the novelist. Look, within recent years, how much has been done by such books as 'Looking Backward' or 'Robert Elsmere.' Everybody is educated now, but comparatively few are very educated. To get an idea to penetrate to the masses of the people you must put fiction round it, like sugar round a pill. No statesman and no ecclesiastic will have the influence on public opinion which the novelist of the future will have. If he has strong convictions, he will have wonderful facilities for impressing them on others. Still his first business will be to interest. If he can't get his sugar right, people will refuse his pill."

SOME FAMOUS GAVELS.

Little Difficulty in Disposing of Certain Emblems of Authority.

Mr. Gladstone was asked last summer where he got all the gavels that hang upon the walls of his library at Hawarden. He said:

"They have been collected from a life-long experience. Some of them date back to college life when I was President of boys' societies and had the pleasure of wielding the gavel."

If Mr. Choate's committee in the Constitutional Convention, which for so many weeks listened to woman's suffrage arguments in the State Capitol at Albany last year, had reported in favor of striking out the word "male" from the Constitution, the women suffragists were going to beg the gavel from Mr. Choate so that they could have it cut up into pieces and made into souvenirs. One of them—so sure of victory was she—actually designed gavel pins, and got up several little ornaments out of pine to see how many could be made out of a piece of wood no bigger than Mr. Choate's gavel.

Mrs. Potter Palmer's gavel—the one by which she kept order among the "lady members" during those stormy anti-Fair days—is one of the proudest ornaments of her Boulevard home; and the chair presented to her by the ladies of a Western State for the committee meetings will undoubtedly go to the Fair memorial building in Chicago, where the gavel may also be added to the list of things historical.

Secretary Carlisle presided over the House several sessions, and used many gavels. In Washington no gavel is ever permitted to see the second season of usefulness. Mrs. Carlisle wanted them very much to bequeath to her descendants, if nothing more; for she is one of the few women who appreciate their husband's qualities and believe they will be famous in history. As the closing day of the sessions approached Mrs. Carlisle always got very anxious about the gavels. And when the last day was at hand she stationed friends all over the House to catch the gavel when the Speaker, in accordance with custom, should throw it as he announced the adjournment. Those present knew Mrs. Carlisle wanted it, and they let her friends catch it for her. This happened only twice.

Lord Roseberry was presiding officer of a society in Christ Church College, Oxford. The gavel he used hangs now above his library mantel in his town house. Speaker Samuel Randall handled three gavels during his Washington career. Two were caught by friends and were presented to the daughters and sisters of the Randall family, and the other was grabbed up by a man, who presented it with his best compliments to a Museum of Historical Things in Richmond, Va. Speaker Reed secured his famous gavel himself by a sort of subterfuge, stationing interested friends where they could catch it. Mrs. Blaine once succeeded in catching one thrown by her husband at the adjournment of the House.

Bismarck was always singularly neglectful of the uses of this important instrument of good order, for he would thunder his commands and would stamp upon the platform and get silence in that way. There is a German story that the title "Man of Iron" came to Bismarck at one of these meetings. He had frowned upon the members of a committee to denote that he wished silence; and then, as there was still a buzz in the room, he brought down his fist with great force upon the hard-topped desk. The blow broke it.

"The Man of Iron," exclaimed one of the German councillors present.

"Yes, and the man of blood, too," ejaculated another, as a few drops of blood trickled from the wounded palm.

Making gavels is very remunerative for manufacturers, because they are bought in great quantities by the city governments without inquiries as to cost. And many are purchased every year by clubs that do not know just what a piece of wood is worth. Then, too, there is a call for very expensive ones for women's clubs, and fancy ones for the meetings that are held for charity in the winter. "Something very pretty, indeed!" is asked for, and the manufacturers put a great deal of work upon the little implements, knowing that the buyers are willing to pay all it is worth.

Speaker Crisp gave his gavel at the close of the last session to Miss Barrett of Georgia, one of the prettiest girls in the State. Several historic ones have been presented to His Royal Highness, the Duke of York; and in this country a great many have found their way "with the compliments of the Chairman" to Mr. Chauncey M. Depew.

Chester A. Arthur, when he was Vice-President, said:

"I presume that snapping my fingers would call the Senate to order, or the tinkle of a bell turn every face to me. But for heavy dignity give me a ponderous gavel."

ELECTRICITY IN BOATS.

A NEW INDUSTRY AND ITS SURPRISING GROWTH.

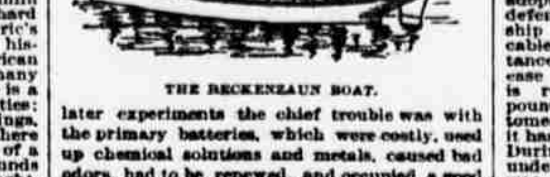
Slow-going Philadelphia Equipping Its Harbor Police With Launches—John Jacob Astor's Experiments and Launches—Use of Such Vessels in Warfare.

The Philadelphia police force is adding an electric launch to its means of patrolling the Delaware and Schuylkill rivers, and is equipping a station to charge the storage batteries. This seems to mark the rapid development of the electrical boat industry. The Thames Conservancy has also lately obtained a similar boat to keep 'Arry in check when he goes out rowing with his best girl. The swift and silent electric launch, emitting no smoke and making no splash, is peculiarly fitted for police patrol work on the water. Another attractive feature is that as no space is occupied by machinery, the motor being down by the rudder and the batteries along the keel line, such boats may be loaded full of men from one end to the other.

Electrical boat manufacture and use are now undergoing rapid development in this country. Up to last year the United States had been behind Europe in this particular development, but a big jump at the Chicago World's Fair brought us fully abreast. The electric fleet in Jackson Park included fifty launches, and the authorities had four specially ornate boats for private service. Between April and November these boats carried about a million passengers, and earned nearly half a million dollars. They ran about 175,000 miles. On Chicago Day they made 622 trips and carried 25,000 persons. Each boat ran regularly about twelve or fourteen hours on a single charging of its batteries. Such a demonstration was conclusive, but it represented fifty years of invention and experiment.

THE BEGINNINGS.

Electrical navigation may be said to begin with Prof. Jacobi, who, in 1838, backed by the Emperor Nicholas, ran a boat on the Neva, near St. Petersburg. A primary battery furnished current to the motor, which drove a big paddle wheel. The boat carried fourteen passengers, and crowds flocked to see her; but the fumes of the battery were so strong as to sicken not only the crew but the onlookers. The motor was probably not very efficient, but in these and



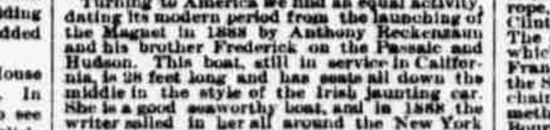
THE RECKENZAUN BOAT.

later experiments the chief trouble was with the primary batteries, which were costly, used up chemical solutions and metals, caused bad odors, had to be renewed, and occupied a good deal of room. It was not until 1881-2 that the Frenchman Trouvé, a man of wonderful ingenuity and versatility, revived the trials successfully at Paris. He used both primary and storage batteries, and cleverly mounted his little motor on the rudder post, whence it actuated a screw propeller. The primary battery has been tried since then here and in Europe, but it is quickly giving way before the storage battery.

Soon a brilliant young Austrian electrical engineer came forward—Anthony Reckenzaun, who was afterward one of the first to exploit storage battery cars in the United States, and died last year of consumption after a trip to the World's Fair. He saw the possibility of improving the electric motor, and soon equipped the Electricity, the first electric boat ever in actual service on the English Thames. She had two motors with complicated countershafting, but ran very well, and orders came to Mr. Reckenzaun for boats from the various European navies and from rich men. Encouraged by his success, Reckenzaun ran a launch called the Volta across the English Channel, from Dover to Calais and back, in 1887.

The trip was made in the month of September, but fortunately the weather and tides were kind. So stealthy was the motion of the boat that Mr. Reckenzaun caught with his hands a sleeping seabird afloat on the waves. This incident attracted universal attention and comment, and soon after the first electric fleet was established to ply on the Thames. This fleet, whose boats are familiar to all American visitors to London, had, by last reports, no fewer than twenty-two launches, five floating changing stations, and four permanent stations. Some of the boats are sixty-five feet long and will carry seventy passengers. Others are much smaller, but all are comfortable. The largest can be hired for $60 a day. These boats have now carried a great many thousand passengers and are very popular with Londoners. A fleet of four launches was operated at the Edinburgh Exhibition, in 1890, and carried 71,000 paying passengers; and another fleet has been started on Lake Windermere.

It is difficult to enumerate all the instances of such work, as electric launches are found to-day in operation on almost every European river or large sheet of water. It is curious to note that their use in conjunction with the gondolas at the World's Fair has led to their introduction



J. J. ASTOR'S ELECTRIC LAUNCH CORCYRA.

on the canals of Venice, where it is believed they will in time become very useful and popular, especially if they have the traditional lines of the older and more picturesque craft, just as the first steam cars were built on the curving lines of the old stage coaches.

Turning to America we find an equal activity, dating its modern period from the launching of the Magnet in 1888 by Anthony Reckenzaun and his brother Frederick on the Passaic and Hudson. This boat, still in service in California, is 28 feet long and has seats all down the middle in the style of the Irish jaunting car. She is a good seaworthy boat, and in 1888 the writer sailed in her all around the New York waters, her trips averaging as much as fifty and sixty miles at a time. This boat had a Reckenzaun motor low down in her stern driving the screw directly on the armature shaft without any intervention of gearing. This is now the general practice, although lately Mr. A. L. Riker of this city and Mr. F. A. La Roche, in Philadelphia, have built launches in which the motor has been mounted clear of the hull of the boat, on the rudder, so that it can be removed at will and applied to any ordinary boat.

JOHN JACOB ASTOR'S EXPERIMENTS.

One of the most enthusiastic electrical yachtsmen to-day in America is young Mr. John Jacob Astor, who, in consultation with Mr. J. C. Chamberlain, is doing some most interesting work. Mr. Astor has already had two or three fine electric launches, and it is not safe to say where he will let his ambition draw the line. His Corcyra, put in commission in 1893, was so handy and so admirably modelled that her general plan was at once adopted by the United States and Russian naval authorities. While being entertained by Mr. Astor at Rhinebeck, the Grand Duke Alexander took a great fancy to the Corcyra, and learning that a similar boat had just been finished for the cruiser New York, got the State Department to allow the contractors to turn her over to him for employment in Russian waters, in his personal service.

The Corcyra was not good enough, however, for Mr. Astor, who now has a twin-screw cruising launch called the Progresso, which he employed this summer at Newport. She is 46 feet long, her propellers are of 18 inches diameter, and each motor is good for four horse power at 800 revolutions. She has 136 cells of battery, and makes from ten to twelve miles an hour. It is betraying no confidence to say that Mr. Astor contemplates making some noteworthy cruises in her, one being through the chain of New York State canals. Of course, for long cruises the problem of charging the batteries when away from places where dynamos and currents are available is a serious one. Among the plans that Mr. Astor has of meeting the difficulty is to carry a tank of oil, an oil engine, and a little dynamo, and charge at night, when the launch is not in use. Other plans suggest themselves, but need not be here referred to.

The only boat in this country to challenge comparison with Mr. Astor's is one launched and put in commission this summer for Congressman Sorg of Ohio. She is 47 feet over all, lined in mahogany, fitted up with stove, lavatory, ice box, &c., and trimmed with silk plush, corduroy, and pea-green damask. In this luxurious barge Mr. Sorg will enjoy himself each summer upon the pleasant waters of the Chautauqua. The latest drawings made for Mr. Astor, however, are for a boat 80 feet long.

AUXILIARIES TO TROLLEY LINES.

But while this development of luxury has been going on, American ingenuity has been quick to turn the electric launch into a means of popular locomotion. There are now a great many places where launches are being operated in conjunction with trolley railways. The street railroad companies are always ready and willing to develop picnic grounds and pleasure resorts at the far end of their lines, and it has occurred to many of them to put launches on the sheets of water adjacent, and to charge the batteries from their trolley circuits. At Altoona an artificial lake of some thirteen acres has been made, and a trip around this is given for ten cents. At Milwaukee a fleet has been established on the river, and the trip of four miles is given for 25 cents. In all such instances the service has proved very popular. A man who expects to ride ten miles for five cents in a street car, puts down his quarter willingly for a ride in a launch for half the distance. The companies have thus developed a new source of income, have to provide practically no extra apparatus, and the current taken from their trolley circuits makes no appreciable difference in operating expenses. At Chicago, some of the World's Fair launches have been retained, fixed up fantastically, and placed on the park waters for regular trips, similar to the Lohengrin swan boats, to which there is

THE BAKER SUBMARINE ELECTRIC BOAT.

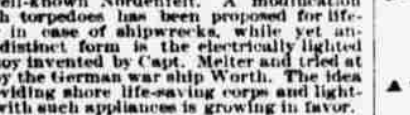
now some talk of applying electricity in place of the human pedal power.

Launch work by no means exhausts the possibilities of electrical navigation in this special direction. There are several variations. One of these is electrical rowboats, of which several have been built, and which are simply rowboats with a motor and a few cells of battery added. These appliances supplement the oars admirably and make it possible even for feeble folk to go fishing, duck shooting, and boating on their own account. Another variation is the electric catamaran. One of these craft was very successful on Lake Conemaugh, which broke loose some years ago and overwhelmed Johnstown, Pa. With a motor of less than one horse power she made four miles an hour, and her battery also furnished current for lighting.

THE SUBMARINE BOATS.

But all these craft are insignificant beside the electrical submarine boats now engaging the attention of the navies of the world. Among these boats may be mentioned the Waddington, Gymnote, Goubet, Gustave Zede, Audac, Peral, and Baker, whose trials have been more or less successful, whose merits would certainly have a practical test in the event of war between European powers. In some of these the motor power is simply an electric motor with storage battery current. In the Baker, an American boat, the motor is so arranged as to run as a generator to charge the batteries, and for this purpose she carries a marine engine. Her pumps can also be run by the electric motor or the engine. The Baker is reported to have remained under water one hour and thirty-five minutes at a time, and to have been sealed up at another time, on the surface and below, two hours and forty-four minutes. The Audac is an Italian boat, designed more particularly for pearl fishing and for the recovery of sunken treasure. She is about thirty feet long and is said to have the ability to descend to a depth of more than 300 feet.

Besides these submergible boats, there is a group of dirigible electric torpedoes, the most conspicuous of which is the Edison-Sims, adopted by the United States army for coast defence. This torpedo can be launched from ship or shore. It carries about 7,000 feet of cable on a reel, and can therefore go that distance under electro-magnetic control. The ease with which its course can be changed is remarkable, and as it carries 500 pounds of explosive, it is an ugly customer for any ship to meet, especially as it has the high speed of twenty knots an hour. During a trial made at Portsmouth, England, under British supervision, the Edison-Sims was successfully launched from a steamer going four knots an hour, was accurately manœuvred from the ship, and paid out her 7,000 feet of cable in four minutes and ten seconds. The chief electrical competitor with this American type is one built by



SUBMARINE BOAT GYMNOTE.

the well-known Nordenfelt. A modification of such torpedoes has been proposed for life-saving in case of shipwrecks, while yet another distinct form is the electrically lighted life buoy invented by Capt. Melter and tried at Kiel by the German war ship Worth. The idea of providing shore life-saving corps and lightships with such appliances is growing in favor.

CANAL BOAT PROPULSION.

Turn now to another field in which electricity is beginning to make its influence felt, that of canal boat propulsion. The questions to be dealt with here are very different from those encountered in electric launch development, and have fostered an entirely separate group of electrical inventions. The importance of the canal as a factor in regulating freight rates has never been disputed, but has steadily dwindled. In 1880, there were in this country 4,468 miles of canal that had cost $214,000,000, and of which 1,953 miles had been abandoned. Of the remainder a large proportion did not pay expenses. The steam propeller on some canals had come to the rescue, but so long as animal power was generally used the struggle was as hopeless as between a horse car line and a steam railroad. With the adoption of electric power, however, such canals might become once again great highways of traffic, answering the needs of bulky freight in the same way as the trolley roads now do for a great deal of suburban travel. The problem has been much the same in Europe, which has about 15,000 miles of canal, and where the change to electrical power has been hoped for not less anxiously than here.

The experiments on the Erie Canal, so intelligently fostered by Gov. Flower, have greatly stimulated inventive activity, and many methods are now offered for adoption. It may be stated that electrical canal boat propulsion is divisible under two distinct heads and that these cover five subdivisions. The canal boat may be towed from the bank or it may be propelled or pulled independently of the shore. In the experiments conducted last year at Rochester the Frank W. Hawley canal boat was equipped with two electric motors driving a dishpan screw, and these motors were fed with a current from an overhead trolley circuit by means, first, of an underrunning trolley wheel contact, and afterward by means of an overrunning trolley. In this instance the electric boat was comparable to the steam propeller or tug, and open to the same objections as to the washing of the canal walls. There are several ways of applying the principle. Mr. S. W. Gear of Buffalo has invented a plan of making the trolley contact and wire laterally movable, while Mr. S. H. Jones of Newark has devised a detachable propeller motor.

The next variation consists in the utilization of a submerged cable or chain towing. This is largely practised with steam propellers in Europe, and was tried on the Erie with the Gov Clinton, but was discontinued as objectionable. The cable is gripped by gearing on the boat, which thus makes its slow way along. In France a method has been employed recently on the Seine of magnetizing the drum over which a chain passes. The Ampère, employing this method, is said to work satisfactorily. On the Bourgogne Canal in France an electric motor is used to revolve the drum that engages with the submerged chain, and this motor takes current from a trolley circuit along the canal. Water power furnishes the prime energy for this interesting plant.

From the submerged cable or chain to a rack is an easy transition, and hence there are several methods of the rack description. Mr. N. P. Otis of Yonkers places a rack along the canal bank and has a motor on the boat driving a pinion, of which the teeth mesh into the rack. Another plan is to place the rack or rail either over the canal boat or along the canal bed; or else to have arms thrown out from the boat to engage with the rack, and thus propel the boat. In the next group of methods a close approximation is made to the cable car system so familiar on Broadway, New York, and other famous streets. A stationary motor or engine operates an endless cable system, and to this the boats hook on. The best example of this method is the Saint Maur and Saint Maurice Canals in France, where this system has been applied by MM. Oriole and Levy. It is obvious that in such work, and in all where the power is applied from the shore, there is a minimum of "wash," and hence the possibility of higher speed. This is one of the strong arguments for the plan of motor locomotive haulage, where the motor simply takes the place of the mule. In the earlier forms of this plan a steam locomotive was used, but this necessitated a very solid structure along the canal, and made the use of the bank for other methods difficult.

Mr. T. D. Davis of Syracuse has devised a plan of laying a narrow-gauge rail track on each bank of the canal and moving the boats in tows of four or six each by means of a small motor and gripping car which takes current from a trolley wire. The plan of Mr. Richard Lamb is apparently much more feasible, and has been successfully tried on the Raritan Canal at Trenton as

ELECTRIC GIG FOR THE GRAND DUKE ALEXANDER.

well as in logging. Mr. Lamb puts up a cable-way on posts along the bank, and upon this cable track has a travelling motor whose grooved wheels run upon the upper "bearing" cable and the lower "traction" cable. The latter takes one or two turns around the motor sheave, which as it goes winds up and pays out. The action is like that of an elevator, except that the pull is horizontal instead of vertical. When boats approach each other on a canal operated in this fashion they exchange motors and cables and then proceed. Some of the old-style trolley street cars still do the same thing. Boats hooking on to the motor make about six miles an hour. The plan is highly practicable and works well.

MR. SACHS'S METHODS.

Mr. Joseph Sachs of this city, a clever electrical engineer barely out of his teens, has made canal propulsion a specialty, and is the author of a variety of methods. He is strongly in favor of bank haulage, and for this has devised an ingenious duplex structure in which motors travel along light rail tracks on high poles and pull the boats with them, being regulated either on the motor or from the boat. It is obvious that these duplex structures with "bicycle" motors a-straddle of the rails allow boats going in opposite directions to pass freely, and that they do not interfere with any other traffic along the bank, such as mule haulage. Moreover, only one bank is occupied, and the other is left free. Mr. Sachs has, however, worked out other plans involving the same ideas, viz.: duplex structure on one bank, single contact rail for both motors, regulation from the boat, and structure or ground "return" of the circuit. Another plan proposes to suspend the motor and its tracks over the canal by means of transverse cables; and another to span the canal by a bridge system, the under side carrying the canal motors, the upper side carrying at its extremities an elevated electric road.

As a whole, the plans of hauling canal boats by small electric motors supported by a light structure appear to have many points of superiority over the other systems proposed. Careful calculations show that if steam be used as the power to drive the electrical generators furnishing current to the motors, the expense of the various systems in competition will be about as follows: Steam propeller, as at present, 13 cents per boat mile for an ordinary canal boat at 3 miles per hour, in 8 feet of water, and carrying 240 tons; electric propeller, electric motor on boat taking the place of the engine, 12 cents per boat mile; electric hauler motor on canal bank, 10¼ cents per boat mile.

ELECTRIC CATAMARAN.

There is, however, every reason to expect the use on the Erie canal of power from Niagara Falls, and this will make the advantages of electric power even more striking. A great deal would be gained by deepening canals. A foot of additional depth counts for a reduction in boat resistance of about 15 per cent., so that less power is required and the boats can go faster.

FUTURE DEVELOPMENTS.

So much for electrical canal boats. It is sufficient to add that the problems are being grappled with seriously, and that in a few years such boats will be as common as trolley cars. At the same time, canal locks will then be operated electrically, as at the Sault Ste. Marie Canal, and boats will be hauled up inclines by electric motor, as on the Biwa-Kioto Canal in Japan. The same current will also supply light along the canal banks, and will probably be tapped frequently for the communities that depend on the canals for their existence. There will also be electrical ferryboats, and one genius has even proposed to moor such boats in their slips by means of electro-magnetism, without ropes or samson posts.

The question naturally arises, if all this forward work is being done, why cannot we cross the Atlantic in electrical ships? Some day we, or our children, will, but to that end it is necessary that adequate means be found of converting the energy of fuel directly into electricity. It is utterly impossible to equip and propel an ocean-going ship by any of the storage batteries yet perfected, and that being the case, current must be generated en route. Hence we must get current direct from coal, and nobody has yet found the way to do that, though Siemens, Kelvin, Edison, Tesla, Helmholtz, Elihu Thomson, and many another genius has thought the matter over painfully. Trouvé, the Frenchman, with Gallic audacity, has calmly proposed to use the sea itself by immersing in it big rafts of copper-zinc couples, which would supply primary battery current to the electric ship towing them. Just what the ship would do in a gale is not very clear. Meantime we must not overlook the advances that have been made nor forget that hundreds of electrical boats are now in use all over the world, and that their use and manufacture has established on solid foundations a great new electrical industry.

THOMAS COMMERFORD MARTIN.

THIS IS A FISH!

A Texan Reviews the Fascinations of the Channel Cat.

"Oh go 'way, go 'way!" sighed an old Texan ranchman on a Sound steamboat the other night, waving a little knot of enthusiastic anglers away with both hands. "Don't talk to me about skittering for muskalonge, trolling for black bass, and casting for trout and salmon. I and every other Texan that knows a good thing when he sees it can tell you of a fish that can out-jump and out-measure and out-fight any swimming creature you can trot out."

He was one of a cluster of men gathered in a dark corner just abaft the wheel-house on the upper deck, and the after dinner chat had wandered around to fun with rod and line. A young fellow who travelled for a Providence hardware firm had just been recalling some famous days on the Rangeleys in Maine in times before summer hotels and railways and guides had destroyed the wilderness. The enthusiasm with which he dwelt on the capture of a seven-pounder, its cat-like rush and leap for the fly, the strike and the fierce fight for freedom, and the gaffing by the Indian at the end had stirred the old-time sporting blood of the grizzled cattle king.

"What fish is that?" asked the college professor, who is a salmon crank, with a sceptical knock of his pipe against the camp-stool.

"The channel catfish is the animal I'm speaking about," began the old man, settling down comfortably and tilting his chair back against the wheel-house, "and in order that there shall be no misunderstanding I want to say right at the beginning that this Texas chap is no relation to your darned slow, stupid, muddy-eyed old pond catfish here in the North. Schoolboys cannot sit on the bank with thread lines tied to twig poles and fish for our cat with bent pins. If they did they would come home wiser and wetter if the tackle held out, for a Texan cat could yank a good-sized boy into the branch and half drown him without trouble. All the streams and creeks that lie to the southwest of the Red River in our State contain this game fighter, and those who have caught both fish regard it as far superior in courage, quickness, and strength to the black bass. Certainly its flesh is far more toothsome.

"We hear very little and read less about this species, and many do not know any of the striking differences between this and the common blue catfish. The channel cat has fins nearly white, sides a pale blue, and a tail very gracefully forked. In shape it is more slender and delicate than the ordinary fish, and it is dotted with black all along the body in several lines. It utters a loud and startling croak when taken from the water, as if in hearty protest against its capture. The flesh is firm, flaky, and of a beautiful salmon tint. It never weighs over six pounds.

"The shallow, quick-running brooks are its haunts, for, unlike its cousin, the blue cat (which, by the way, grows to weigh twenty-five pounds), it never lingers in stagnant lakes or lagoons. It feeds on the bottom, as a rule, but will rise freely to minnow, grasshopper, worm, or even fly. At the upper end of a stillpool, where the ripple of the swift water dies away in dimpled curls, you will take him early in the morning and at sunset. At noon he lies torpid on the bottom in cool, shadowed spots.

"One of the prettiest ways to charm a channel cat is on a silver spinner. You drift down creek with the current late in the afternoon and cast from side to side with about fifty feet of line. Wherever the water twists over a rock or wrinkles around a sunken stump you send your whirling toy, and reeling slowly in you will entice any channel fish that may be near. In just such little lairs they lie when the shadows grow long, and sometimes the creek for rods will be a-splash with the commotion of their feeding.

"One uses a long, slender rod and a light silk line, for the tackle must be delicate and strong. Once a cat is struck he becomes a veritable maniac. He surges along the top, and then in circles of bubbles, dives to the very bed of the stream. Along the bottom he will tear at a breakneck pace that makes the reel scream to follow, and if there be any snags (and what Texan branch but has its brush and roots and fallen trees) then let your prayer for help ascend. If the channel cat is a dangerous fish in clear, swift water, among rocks and tree stumps he is a very devil. A big one will fight for fifteen or twenty minutes before you can kill him.

"If one desires to use flies he must use very bright colors. There is a very gay blue miller that dances along the edges of the creeks in our country of which the cat is passionately fond, and there is a fly tied by most of our cat fishermen in close imitation of it called the 'smoky blue.' In this way of fishing one must cast from a boat always, and toward the shore, for it is under the overhanging clay banks that the fish lie to catch stray moths and hoppers. If fishing with a minnow you may float off into midstream, for the game will take small fish any and everywhere and all the time.

"No one ever knew the channel cat to desert a fisherman. You don't have to carry fifteen kinds of bait with you and then always find he wants the sixteenth. He takes what he can get and swallows it deep into a mouth as widespreading and affectionate as that of an earnest revivalist. In rain or sunshine, from April till November, week days, Sundays, and legal holidays, the cat is always doing business at the same old stand. He is an honest, plucky fish, and never goes back on his feed, and that is why we old chaps of the cattle lands stand by the channel cat."

And as the old man finished and tossed his red-tipped cigar butt out into the darkness the college professor and the drummer and the meek little doctor from Boston all vowed that before many moons had come and gone they would try a hand on this big-mouthed beauty of the Texan creeks.

COLORADO WOMEN VOTERS.

THE POLITICAL CAMPAIGN IN THAT STATE IS IN A WHIRL.

Mrs. Bonanza and Mrs. Silver King Associate with Mrs. Ward Heeler—Servants Gain Liberties As the Result of the Effort to Down Gov. Waite.

DENVER, Oct. 2.—Women are making things hum in this year's political campaign in Colorado. Early and late during waking hours their whole attention seems to be taken up by political thought and political talk. They are going to vote for State candidates this year. At the bargain counters the patient clerks must wait until Mrs. Walker confides to Mrs. Barker the latest bit of campaign gossip; on the street cars discussions of a political nature are carried on by the women with a frankness and with such positive convictions as to astonish a listener new to the State, and even at church committee meetings the business is despatched that more time may be had for the exchange of campaign news.

It is sober truth to assert that the morning paper is eagerly read by all the women, that the latest political information may be gleaned before the accustomed morning duties are attended to. The interest taken in the candidates before the public is amazing. Their respective character, reputation, business career, and officeholding ability are keenly scanned and thoroughly discussed when women meet. Politics, local, State, and national, is the all-absorbing topic.

Political meetings in this city occur daily in private residences and in public places all over the city. The women attend them all. Mrs. Bonanza, in her luxuriously furnished parlors on Capitol Hill, sends out engraved invitations for a reception to meet Mrs. Squaker, who will talk upon the issues of the day. These invitations go not only to the privileged class who have in the past been upon her visiting list, but to the mistresses of humbler homes in the neighborhood, whose existence prior to the campaign was ignored by the hostess. At this reception, besides Mrs. Squaker, there appears Mr. Ward Heeler, candidate for District Attorney, and Mr. Fee Grabber, late Justice of the Peace, who is now slated for the high office of District Judge. All make nice, complimentary talks, urging the ladies present to redeem the State from the misrule of Populism and the Anarchists now in places of trust. Then a collation is served, some one sings a song or plays a piano solo, and the function is at an end.

Down at Parson Tom Uzzell's mission tabernacle the East Denver Woman's Republican Club arrange a mass meeting. The ladies from the hill drive thither in their carriages and lend their smiling countenances to the occasion. State candidates make the usual addresses, the programme being interspersed with songs and piano duets. Thus the humblest working man is told where lies his duty. Senators Teller and Wolcott speak to throngs in the floral-bedecked and flag-draped rotunda of the beautiful Brown Palace Hotel, while leaning over the bronze railings from every floor to the glass roof are handsomely dressed women anxious to know the full extent of the evils of Populism and anarchism.

Gov. Waite, returning from a tour through the State, where he receives at every stopping place as big an ovation as the size of the town can furnish, goes to the Coliseum and arraigns the Republican and Democratic parties in his usual picturesque style, and there, too, the women almost outnumber the men. He attacks the aristocracy of Capitol Hill and the Brown Palace meetings, where he declares a man with overalls and a woman with a calico gown would be as much out of place as a bull or a cow in a china shop. Women with babes in arms stand upon the sawdust-strewn floor by the hour and listen to such speeches. In all parts of the city, by day and by night, political talking goes steadily on, and the women are always as much, if not more, interested than the men.

Women upon all sorts of committees visit from house to house soliciting support for the respective tickets. The promise of social attentions and freedom to call upon Mrs. Bonanza and Mrs. Silver King are offered to those women who will come out and assist in the work of redemption.

The desire to defeat Gov. Waite is so intense in Republican party circles that servants, chambermaids, coachmen, and all kinds of applicants for situations are required in many cases to give voice to their political beliefs before they receive positions. The working class, therefore, have readily realized that it is to their best interest to declare publicly their faith in the Grand Old Party. Then the mistress of the house, wishing to keep these servants until after election, makes their paths as comfortable as possible. The cook can entertain her beaux in the kitchen as often as she likes, provided she assures her employer that these visitors are all Republicans; the house maid gets many evenings out when she satisfies her mistress that she wants to go to Republican political meetings; perfumery and pretty red garters are dispensed with lavish hands to the chambermaids who agree to support the Republican ticket. It is not unusual to hear a mistress of a Capitol Hill residence say:

"My second girl, Mary, was a Populist, and when I found that out I discharged her."

One enthusiastic woman, Mrs. Sue M. Hall, assistant secretary of the Republican State Central Committee, said that she proposed to give a necktie to every man who would promise to support McIntire. When this statement was published she was immediately in great demand. Her pink tartan ties were eagerly sought for, and now she has a contract with a leading dry-goods house to furnish her with pink McIntire ties by the thousands. A band of women met recently and decided to organize McIntire marching clubs to be composed of young girls who cannot vote, but whose influence is deemed essential to the redemption of the State. They are to carry brushes, and will be drilled by a graduate of a military school.

The women have independent headquarters, where proper officers and attendants map out campaign plans, receive reports, and, aided by the advice of the practical politicians, work for partisan success. Women speakers are secured and assigned to duties, committees of all sorts are named, and every woman who has a place upon one of these numerous committees enters upon the discharge of her duties with all the ardor of the most experienced ward worker.

The arguments made use of by the women in private conversations are most astonishing and amusing. It would seem that they are the most gullible class of voters ever known. They are partisan to the core, and, when once they have announced themselves, they defend their party ticket to the last, despite what may be said. This applies alike to those women who publicly appear in the campaign and to those who refuse to leave their homes. From the present indications it would seem that every woman in this city will go early to the polls to cast her first ballot for State officials.

BE SURE TO PAY THE RIGHT MAN.

The Fruit Stand Merchant's Love for a Stroll in Business Hours.

The Italian fruit dealers who keep the little stands on the numerous corners throughout the city have many peculiar habits, the most noticeable of which is not being near their stands when one wants to purchase fruit. If the stand is on the southeast corner, its proprietor is almost certain to be on the northwest corner. At any rate it is about ten chances to one that if a purchaser wants change or has any question to ask, he will have to look for the Italian, in a way that makes him conspicuous and arouses the suspicion of the policeman, bootblack, and newsdealer near by.

Then after the purchaser has about decided that some charitable institution has established this stand for the purpose of getting rid of good fruit for nothing, the pantata of the stand appears with a grin of apology. After getting the customer's money he disappears around the corner or evaporates, or something, until the next customer comes along and nearly waits his legs off standing around.

The other afternoon a plain, ordinary man who was making for a down-town Third avenue train, stopped at a fruit stand near the corner. Piles of pears marked "3 for 10" lay in their little paper nests. It was very dusty and warm. The newsboy cried "extree!" and the bootblack said "shineumup" in a twangy voice. A piano organ across the street drowned the jingle of the car bells with the strains of "Sweet Marie." The man pulled out a dime, picked up three pears and looked for the proper person to give the dime to; he didn't know whether to leave it among the pears or not, but had about decided to do so when a grinning Italian, who was evidently the owner of the stand, appeared, as though from a coal hole in the pavement and extended his hand for the money. The man buried his teeth into one of the pears, dropping the dime into the Italian's hand and started across the street.

The organ switched from "Sweet Marie" to "The Bowery." The man reached the entrance to the elevated stairs when he was caught by the sleeve, and turning he beheld an Italian who looked about as other Italians who sell fruit, black boots and grind organs.

"You no pay for da fruita," he said, holding on to the man's sleeve.

"Yes I did," said the man, "I gave it to you or your partner, or somebody. Here I'll go back and show you," seeing that there was no escape unless he gave up another dime.

"There's the fellow I paid," said the man on arriving at the stand.

"Oh!" said the fruit dealer, "him no partner. He collecta for da organ."

The man gave up another dime, said something out loud, and rushed for the train. The organ played "After the Ball," and the proprietor of the fruit stand went across the street and sat in the bootblack's chair until he saw a policeman moving toward his stand.